

	Document ID	Issue Date	Current OR	Inventor
1	US 5611052 A	19970311	705/38	Dykstra, Diana R. et al.
2	US 5592375 A	19970107	705/7	Salmon, Bardwell C. et al.
3	US 5584025 A	19961210	707/104.1	Keithley, Ronald D. et al.
4	US 5560005 A	19960924	707/10	Hoover, Michael K. et al.
5	US 5508913 A	19960416	705/37	Yamamoto, Kenichi et al.
6	US 5500793 A	19960319	705/37	Deming, Jr., Robert F. et al.
7	US 5375055 A	19941220	705/37	Togher, Michael et al.
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*Priority from  
Parent 08/*



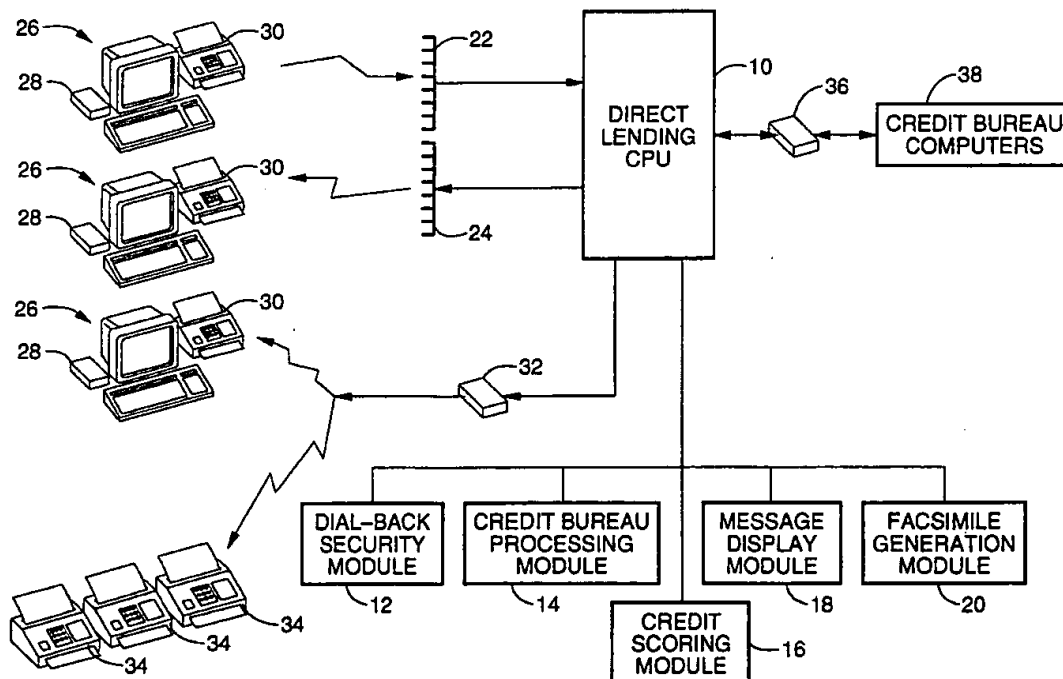
US005611052A

**United States Patent** [19][11] **Patent Number:** **5,611,052****Dykstra et al.**[45] **Date of Patent:** **Mar. 11, 1997****[54] LENDER DIRECT CREDIT EVALUATION  
AND LOAN PROCESSING SYSTEM****[75] Inventors:** **Diana R. Dykstra, Herald; Patricia M. Wade,** Meadow Vista, both of Calif.**[73] Assignee:** **The Golden 1 Credit Union,** Sacramento, Calif.**[21] Appl. No.:** **146,692****[22] Filed:** **Nov. 1, 1993****[51] Int. Cl.<sup>6</sup> .....** **G06F 17/60; G06G 7/52****[52] U.S. Cl. ....** **395/238; 395/235****[58] Field of Search .....** **364/401, 408,  
364/406, 401 R; 235/375, 379, 380, 382****[56] References Cited****U.S. PATENT DOCUMENTS**

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5,274,547	12/1993	Zoffel et al. ....	364/408

*Primary Examiner*—Gail O. Hayes*Assistant Examiner*—Stephen R. Tkacs*Attorney, Agent, or Firm*—John P. O'Banion**[57] ABSTRACT**

An apparatus and method for automatic credit evaluation and loan processing is disclosed. The apparatus includes a central processing unit which has capabilities for communicating with off-site remote access terminals. The central processing unit also includes facsimile transmission capabilities as well as capabilities for communicating with credit bureau computers. Mass storage capabilities are included for storing program modules executable on the central processing unit and for maintaining databases. Program modules are provided for remote access security, credit bureau information processing, credit scoring, message display, and facsimile generation. In operation, the central processing unit is accessed from a remote terminal, loan application information is entered into the remote terminal, credit bureau information is accessed by the apparatus, credit scoring is performed, and a loan application is approved or declined. All steps, except for the entering of loan application information into the remote terminal, are fully automated, require no intermediate human intervention, and no intermediate handling of paper records. Application status is provided to the user via a visual display on the remote access terminal and hard copy confirmation to the user and lender via facsimile transmission.

**16 Claims, 7 Drawing Sheets**



US005592375A

**United States Patent** [19]

Salmon et al.

[11] **Patent Number:** 5,592,375[45] **Date of Patent:** Jan. 7, 1997

[54] **COMPUTER-ASSISTED SYSTEM FOR INTERACTIVELY BROKERING GOODS OR SERVICES BETWEEN BUYERS AND SELLERS**

[75] **Inventors:** Bardwell C. Salmon, Weston; John D. Borgman, Acton; Thomas O. Holtey, Newton, all of Mass.

[73] **Assignee:** Eagleview, Inc., Weston, Mass.

[21] **Appl. No.:** 212,349

[22] **Filed:** Mar. 11, 1994

[51] **Int. Cl.<sup>6</sup>** ..... G06F 17/60; G06F 19/00

[52] **U.S. Cl.** ..... 395/207; 364/408; 395/209; 395/222; 395/605

[58] **Field of Search** ..... 364/401, 402, 364/403, 407, 419.19, 408

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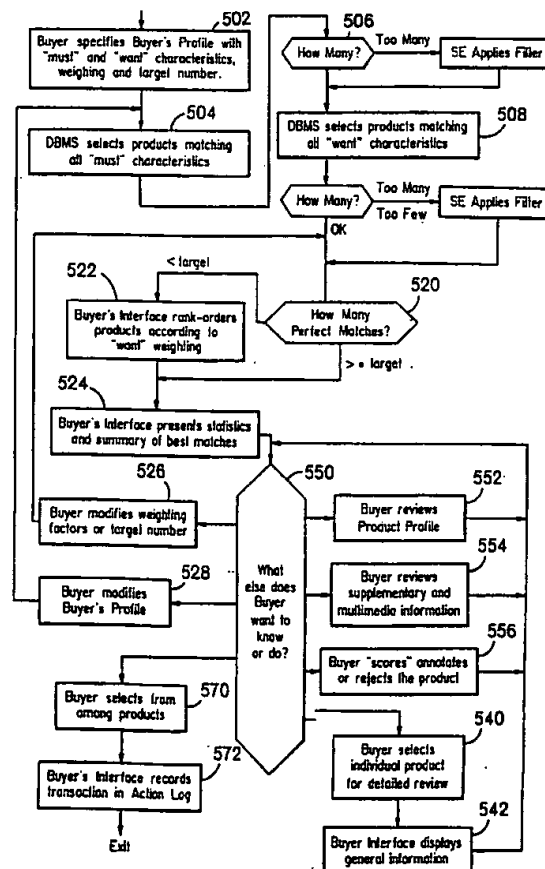
*Primary Examiner*—Robert A. Weinhardt

*Attorney, Agent, or Firm*—Fish & Richardson P.C.

[57] **ABSTRACT**

A computer-implemented system for brokering transactions between sellers and a buyer of goods or services, including a database, a seller interface, and a buyer's interface. The database contains information, including multimedia information, descriptive of respective ones of the goods or services. The seller interface enables the sellers to interactively enter information, including multimedia information, into the database. The buyer's interface provides a knowledge-based interactive protocol, enabling the buyer to select and review the descriptive information from the database, and makes perceptible the multimedia information in response to an interactive buyer request.

**11 Claims, 46 Drawing Sheets**





US005584025A

**United States Patent** [19]**Keithley et al.**[11] **Patent Number:** **5,584,025**[45] **Date of Patent:** **Dec. 10, 1996**[54] **APPARATUS AND METHOD FOR  
INTERACTIVE COMMUNICATION FOR  
TRACKING AND VIEWING DATA**

5,237,157	8/1993	Kaplan	235/375
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[75] **Inventors:** **Ronald D. Keithley**, Charlottesville;  
**Kevin L. Keithley**, Earlsyville, both of  
Va.

**Primary Examiner**—Robert B. Harrell  
**Assistant Examiner**—Viet Vu  
**Attorney, Agent, or Firm**—Sheldon H. Parker

[73] **Assignee:** **The Real Estate Network**,  
Charlottesville, Va.[57] **ABSTRACT**[21] **Appl. No.:** **420,701**[22] **Filed:** **Apr. 12, 1995****Related U.S. Application Data**

[63] Continuation of Ser. No. 145,399, Oct. 29, 1993, abandoned.

[51] **Int. Cl.**<sup>6</sup> ..... **G06F 17/40**[52] **U.S. Cl.** ..... **395/615; 364/225.4**[58] **Field of Search** ..... **395/600, 161;  
364/401, 408**[56] **References Cited****U.S. PATENT DOCUMENTS**

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5,191,410	3/1993	McCalley et al.	358/86
5,235,680	8/1993	Bijnagte	395/161

An information processing system for acquiring and displaying information relating to a specific industry or interest, the example herein being real estate and related goods and services. The system comprises a server which has an input/output device for receiving and transmitting data, database files, and database storage. A media terminal for producing files, including digitized property descriptions, is provided. The media terminal has a digitizer for analog/digital signal converting, an i/o device for transmitting, and a data entry device. An end user terminal provides the ability to enter, transmit, receive and display data to and from the file server. An agent's terminal is equipped to enter and display data, as well as transmit information to and from the file server. The system is configured such that real estate information is received at the media terminal, edited, and, once approved, stored at the file server. The information is accessible from either the agent's or end user's terminals. The compilation of information in the databases includes demographic statistics which are usable by Advertisers and various industry related entities.

**9 Claims, 9 Drawing Sheets**

900

AD NUMBER	INQUIRY DATE	INQUIRY QUANTITY
18005551234	01-03-93	11,958
18005555678	01-04-93	10,450
18005559012	01-05-93	52,358
18005551314	01-08-93	90,560
18005551516	02-09-93	62,985
18005551718	04-15-93	11,040
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18005552122	06-19-93	11,771

PROPERTY INQUIRIES		PROPERTY RETRIEVALS		ADVERTISER INQUIRIES		ADVERTISER RETRIEVALS	
PRICE	PROPERTY TYPES	LEASE	PURCHASE	MOVING	SPACE REQUIREMENTS		



US005560005A

**United States Patent** [19]  
**Hoover et al.**

[11] **Patent Number:** **5,560,005**  
 [45] **Date of Patent:** **Sep. 24, 1996**

- [54] **METHODS AND SYSTEMS FOR OBJECT-BASED RELATIONAL DISTRIBUTED DATABASES**
- [75] Inventors: **Michael K. Hoover**, Roswell; **Barrick H. Miller**, Marietta; **Kurt Schurenberg**, Roswell; **Richard A. Daigle**, Atlanta, all of Ga.
- [73] Assignee: **ActaMed Corp.**, Atlanta, Ga.
- [21] Appl. No.: **202,493**
- [22] Filed: **Feb. 25, 1994**
- [51] Int. Cl.<sup>6</sup> ..... **G06F 17/30; G06F 15/163**
- [52] U.S. Cl. .... **395/600; 364/DIG. 1; 364/283.4; 364/228; 364/229.5; 364/284.4**
- [58] Field of Search ..... **395/200.03, 200.09, 395/200.1, 600, 700**

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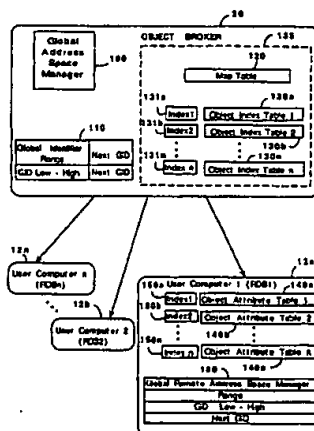
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**Primary Examiner**—Thomas M. Heckler  
**Attorney, Agent, or Firm**—Jones & Askew

[57] **ABSTRACT**

An object-based relational distributed database system and associated methods of operation that transforms data stored in a plurality of remote, heterogeneous user databases into a homogeneous data model is disclosed. Data stored in distributed, heterogeneous user database structures is homogenized by mapping into object attributes of predetermined instances of objects forming to a conceptual model that relates the various heterogeneous databases. The object attributes are stored in remote databases at client sites, which can be separate computer systems from the heterogeneous user databases or separate processes running on a computer system that maintains the heterogeneous user databases. The system stores location information and status information relating to the homogenized data in a centralized object broker for object management, thereby facilitating location and retrieval of data items from one or more of the remote, heterogeneous user databases.

**85 Claims, 32 Drawing Sheets**



US005508913A

**United States Patent** [19][11] **Patent Number:** **5,508,913****Yamamoto et al.**[45] **Date of Patent:** **Apr. 16, 1996**

[54] **ELECTRONIC AUTOMATIC OFFER  
MATCHING SYSTEM FOR FREEZER  
EXCHANGE TRANSACTIONS AMONG  
BANKS**

[75] Inventors: Kenichi Yamamoto, Kawasaki;  
Yoshihisa Kimura, Oomiya; Yasuhide  
Yamamoto, Tokyo, all of Japan

[73] Assignee: Fujitsu Limited, Kawasaki, Japan

[21] Appl. No.: 214,745

[22] Filed: Mar. 18, 1994

[30] **Foreign Application Priority Data**

Apr. 23, 1993 [JP] Japan ..... 5-097922

[51] Int. Cl.<sup>6</sup> ..... G06F 19/00

[52] U.S. Cl. .... 364/408

[58] Field of Search ..... 364/408, 401,  
364/400

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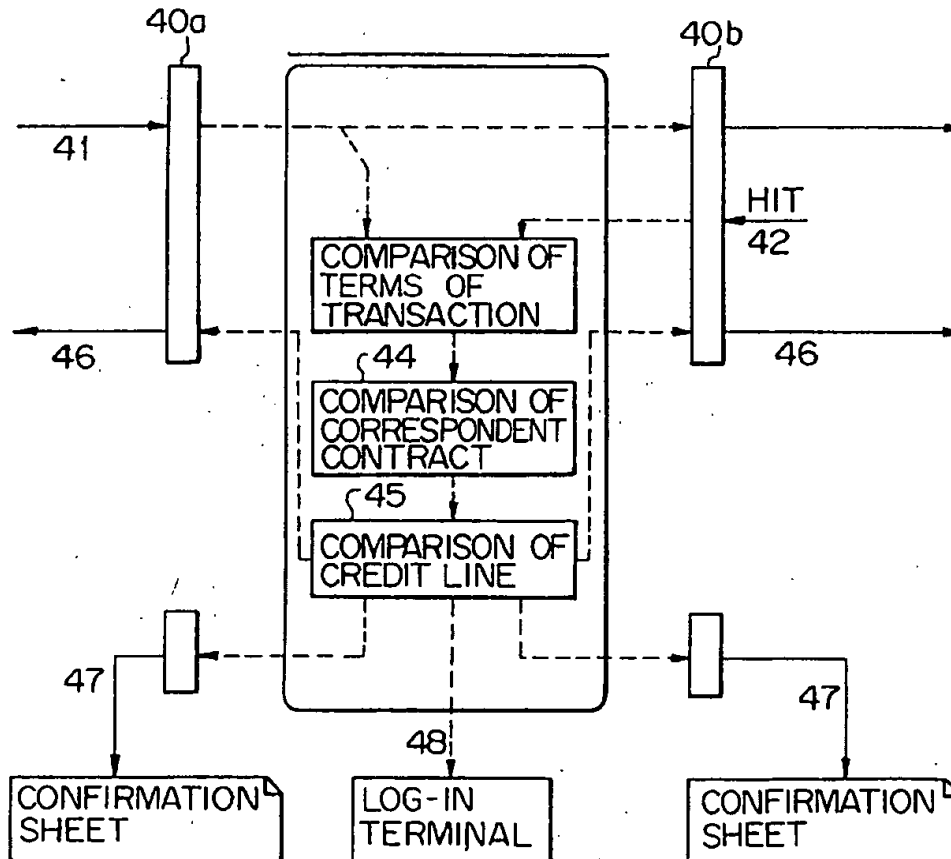
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4-032938 2/1992 Japan .

*Primary Examiner*—Donald E. McElheny, Jr.  
*Attorney, Agent, or Firm*—Staas & Halsey

[57] **ABSTRACT**

An electronic dealing system which performs foreign exchange transactions among banks etc. by matching terms of sale and terms of purchase, provided with a leave-order function whereby a dealing terminal may continue to place orders on the market and automatically perform transactions even after log-out processing. This enables transactions to be safely performed even when the operator is not present.

**10 Claims, 26 Drawing Sheets**





US005500793A

**United States Patent** [19][11] **Patent Number:** **5,500,793****Deming, Jr. et al.**[45] **Date of Patent:** **Mar. 19, 1996**

[54] **COMPUTERIZED SYSTEM FOR  
DEVELOPING MULTI-PARTY PROPERTY  
EQUITY EXCHANGE SCENARIOS**

[75] **Inventors:** Robert F. Deming, Jr., Malibu;  
Stephen E. Deming, Pasadena, both of  
Calif.

[73] **Assignee:** Equitrade, Los Angeles, Calif.

[21] **Appl. No.:** 116,343

[22] **Filed:** Sep. 2, 1993

[51] **Int. Cl.<sup>6</sup>** ..... G06F 19/00

[52] **U.S. Cl.** ..... 364/401

[58] **Field of Search** ..... 364/401, 408,  
364/403, 406

[56] **References Cited**

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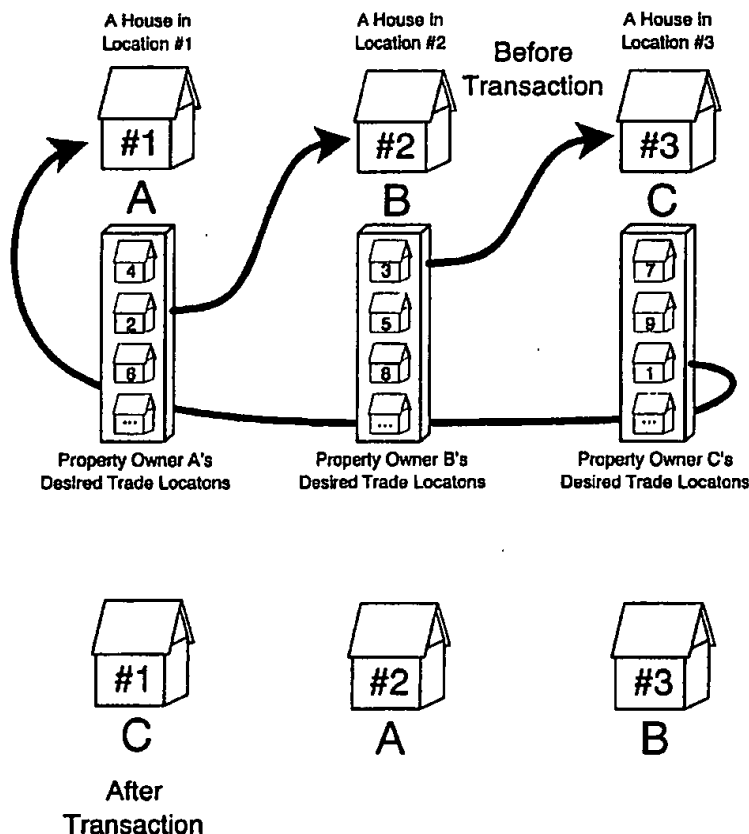
*Primary Examiner*—Donald E. McElheny, Jr.

*Attorney, Agent, or Firm*—Kelly, Bauersfeld & Lowry

#### [57] **ABSTRACT**

A computerized, interactive system to search for and identify possible real property equity exchanges involves the establishment of a data field in an electronic data base to enable a user to develop, locate and identify property trade scenarios. A computer is utilized to process data from a plurality of sources, each providing specifics of the owner's exchange desires and the current property's characteristics. The computer reviews trade location desires of the property owner and finds potential trades from the location of other tradable properties. There need not be a direct match or a reciprocal match between two properties for a possible property exchange to be identified. The system allows identification of exchange scenarios involving many different properties, wherein the exchange scenarios can be circular or open ended.

**40 Claims, 21 Drawing Sheets**





US005375055A

**United States Patent** [19][11] **Patent Number:** **5,375,055****Togher et al.**[45] **Date of Patent:** **Dec. 20, 1994**[54] **CREDIT MANAGEMENT FOR ELECTRONIC BROKERAGE SYSTEM**[75] **Inventors:** Michael Togher, New York City, N.Y.; Michael F. Dunne, Boonton; Richard Hartheimer, Morris Plains, N.J.[73] **Assignee:** Foreign Exchange Transaction Services, Inc., Long Island City, N.Y.[21] **Appl. No.:** 830,408[22] **Filed:** Feb. 3, 1992[51] **Int. Cl.<sup>3</sup>** ..... G06F 15/21[52] **U.S. Cl.** ..... 364/408; 340/825.26; 340/825.27[58] **Field of Search** ..... 364/408; 340/825.26; 340/825.27[56] **References Cited****U.S. PATENT DOCUMENTS**

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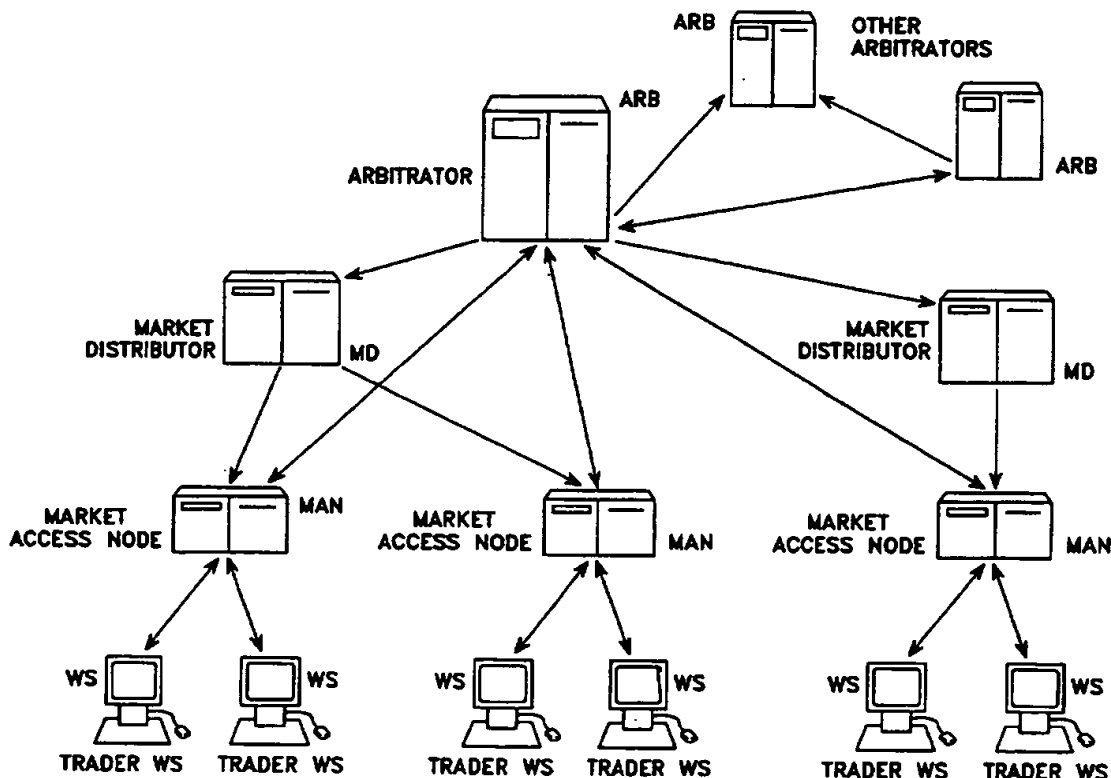
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An anonymous trading system identifies the best bids and offers from those counterparties with which each party is currently eligible to deal, while maintaining the anonymity of the potential counterparty and the confidentiality of any specific credit limitations imposed by the anonymous potential counterparty. To that end, each bid or offer for a particular type of financial instrument is prescreened by the system for compatibility with limited credit information (for example, a one bit flag indicating whether a predetermined limit has already been exceeded) and an anonymous "Dealable" price is calculated for each of the traders dealing with that particular financial instrument.

**17 Claims, 6 Drawing Sheets**





US005297031A

**United States Patent** [19][11] Patent Number: **5,297,031**

Guttermann et al.

[45] Date of Patent: **Mar. 22, 1994****[54] METHOD AND APPARATUS FOR ORDER MANAGEMENT BY MARKET BROKERS**

[75] Inventors: **Burton J. Guttermann, Glencoe; John J. Brogan, Palatine; Thomas Palenik, Oak Forest; Dolores Panek, St. Charles; Shirley Wu, Roselle, all of Ill.**

[73] Assignee: **Chicago Board of Trade, Chicago, Ill.**

[21] Appl. No.: **489,196**

[22] Filed: **Mar. 6, 1990**

[51] Int. Cl.<sup>5</sup> ..... **G06F 15/20**

[52] U.S. Cl. .... **364/408; 364/406**

[58] Field of Search ..... **364/408, 412, 406**

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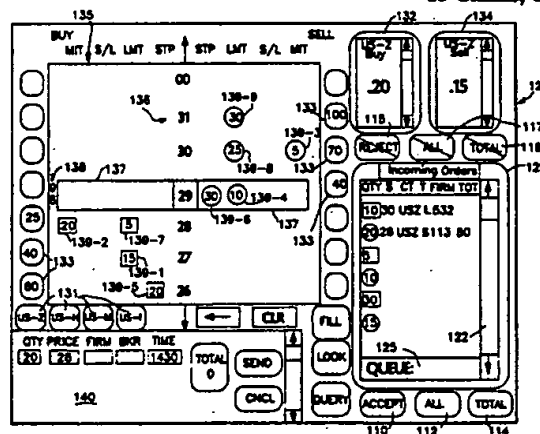
Primary Examiner—Roy Envall

Assistant Examiner—Frantzy Poinvil

Attorney, Agent, or Firm—Kirkland & Ellis

**[57] ABSTRACT**

There is provided a broker workstation for managing orders in a market for trading commodities, securities, securities options, futures contracts and futures options and other items including: a device for selectively displaying order information; a computer for receiving the orders and for controlling the displaying device; and a device for entering the orders into the computer; wherein the displaying device comprises a device for displaying selected order information about each incoming order, a device for displaying a representation of an order deck and a device for displaying a total of market orders. In another aspect of the invention, there is provided in a workstation having a computer, a device for entering order information into the computer and a device for displaying the order information entered, a method for managing orders in a market for trading commodities, securities, securities options, futures contracts and futures options and the like comprising the steps of: selectively displaying order information incoming to the workstation; accepting or rejecting orders corresponding to the incoming order information displayed; displaying accepted order information in a representation of a broker deck; and selectively displaying a total of orders at the market price.

**13 Claims, 8 Drawing Sheets**

**United States Patent** [19]  
**Silverman et al.**

US005136501A

[11] **Patent Number:** **5,136,501**  
[45] **Date of Patent:** **Aug. 4, 1992**

[54] **ANONYMOUS MATCHING SYSTEM**

[75] **Inventors:** David L. Silverman, Nesconset;  
Norman Keller, Mt. Sinai, both of  
N.Y.

[73] **Assignee:** Reuters Limited, London, England

[21] **Appl. No.:** 357,478

[22] **Filed:** May 26, 1989

[51] **Int. Cl.:** G06F 15/20; G06G 7/52

[52] **U.S. Cl.:** 364/408

[58] **Field of Search:** 364/401, 408

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*Primary Examiner*—Dale M. Shaw

*Assistant Examiner*—Laura Brutman

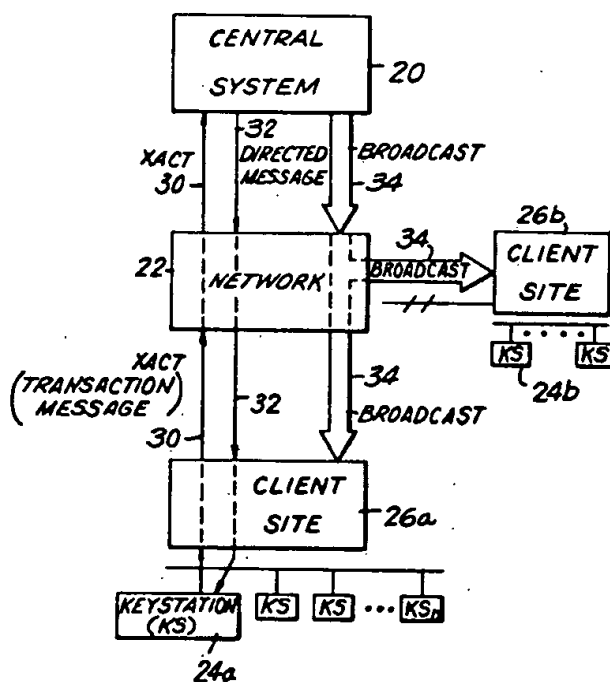
*Attorney, Agent, or Firm*—Bryan Cave

[57] **ABSTRACT**

A matching system for trading instruments in which bids are automatically matched against offers for given

trading instruments for automatically providing matching transactions in order to complete trades for the given trading instruments, includes a host computer means (20) comprising means for anonymously matching active bids and offers in the system by trading instrument based on a variable matching criteria, which comprises counterparty credit limit between counterparties (24a, 26b) to a potential matching transaction. The system also includes a transaction originating keystation (24a) for providing a bid on a given trading instrument to the system for providing the potential matching transaction; a counterparty keystation (26b) for providing an offer on the given trading instrument involved in the potential matching transaction; and network means (22) for interconnecting the host computer means (20), the transaction originating keystation (24a) and the counterparty keystation (26b) in the system for enabling data communications therebetween. Both the transaction originating keystation (24a) and the counterparty keystation (26b) for the potential matching transaction each have an associated counterparty credit limit, with the system (20) blocking completion of the potential matching transaction between the transaction originating keystation (24a) and the counterparty keystation means (26b) when the potential matching transaction has an associated value in excess of counterparty credit limit. The assigned credit limits may be reset or varied by the users (24a, 26b) to change the ability of the user or subscriber to effectuate deals.

57 Claims, 14 Drawing Sheets



**United States Patent** [19]  
**Lloyd**

[11] **Patent Number:** 4,876,648  
[45] **Date of Patent:** Oct. 24, 1989

[54] **SYSTEM AND METHOD FOR  
IMPLEMENTING AND ADMINISTERING A  
MORTGAGE PLAN**

[76] **Inventor:** Clarke B. Lloyd, 4710 N. Marine Dr.,  
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[21] **Appl. No.:** 143,003

[22] **Filed:** Jan. 12, 1988

[51] **Int. Cl.<sup>4</sup>** ..... G06F 15/00; G06G 7/52

[52] **U.S. Cl.** ..... 364/408; 364/400

[58] **Field of Search** ..... 364/408, 401, 400

[56] **References Cited**

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*Primary Examiner*—Jerry Smith

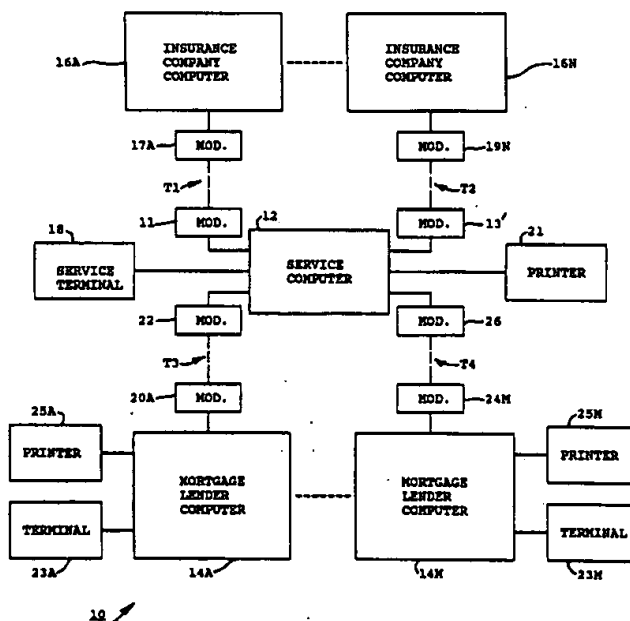
*Assistant Examiner*—Gail O. Hayes

*Attorney, Agent, or Firm*—Bernard L. Kleinke; Jerry R. Potts; William P. Waters

[57] **ABSTRACT**

A computerized mortgage implementing system includes a central service computer, which helps establish and maintain mortgage plans based upon mortgages at least partially collateralized by investment vehicles. Both a plurality of groups of investment vehicle information and mortgage information are stored in the service computer. Borrower information is entered in the service computer when a mortgage plan is to be established. An individual one of the groups of investment information is selected. A desired amount of the investment funding is determined for helping repay a mortgage plan. Mortgage implementing information is generated for a given mortgage plan, and is sent to a mortgage lender computer to facilitate the establishment of the mortgage plan.

**43 Claims, 15 Drawing Sheets**



**United States Patent** [19]  
**Shavit et al.**

[11] **Patent Number:** 4,799,156  
[45] **Date of Patent:** Jan. 17, 1989

[54] **INTERACTIVE MARKET MANAGEMENT SYSTEM**

[75] **Inventors:** Eyal Shavit, New York, N.Y.; Lester Teichner, Chicago, Ill.

[73] **Assignee:** Strategic Processing Corporation, New York, N.Y.

[21] **Appl. No.:** 914,172

[22] **Filed:** Oct. 1, 1986

[51] **Int. Cl.<sup>4</sup>** ..... G06F 15/21

[52] **U.S. Cl.** ..... 364/401; 364/408

[58] **Field of Search** ..... 364/400-408,  
364/200 MS File, 900 MS File; 340/825.26,  
825.27, 825.28

[56] **References Cited**

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*Primary Examiner*—Jerry Smith

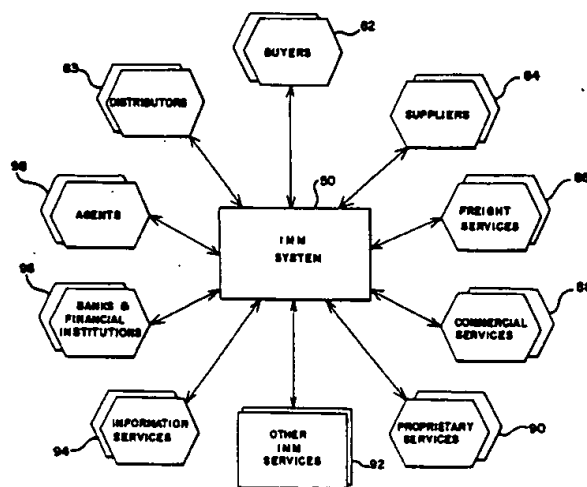
*Assistant Examiner*—Allen MacDonald

*Attorney, Agent, or Firm*—Welsh & Katz, Ltd.

[57] **ABSTRACT**

A system for interactive on-line electronic communications and processing of business transactions between a plurality of different types of independent users including at least a plurality of sellers, and a plurality of buyers, as well as financial institutions, and freight service providers. Each user can communicate with the system from remote terminals adapted to access communication links and the system may include remote terminals adapted for storage of a remote data base. The system includes a data base which contains user information. The data base is accessed via a validation procedure to permit business transactions in an interactive on-line mode between users during interactive business transaction sessions wherein one party to the transaction is specifically selected by the other party. The system permits concurrent interactive business transaction sessions between different users.

43 Claims, 31 Drawing Sheets



# United States Patent [19]

Cohen et al.

[11] Patent Number: 4,750,119

[45] Date of Patent: Jun. 7, 1988

## [54] PURCHASING SYSTEM WITH REBATE FEATURE

[75] Inventors: Jeffery M. Cohen; Ian M. Robertson, both of Boca Raton, Fla.

[73] Assignee: Tradevest, Inc.

[21] Appl. No.: 917,894

[22] Filed: Oct. 10, 1986

[51] Int. Cl.<sup>4</sup> ..... G06F 15/21; G06F 3/02

[52] U.S. Cl. .... 364/401; 364/408

[58] Field of Search ..... 364/401, 406, 408

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Primary Examiner—Charles E. Atkinson

Assistant Examiner—Gail Hayes

Attorney, Agent, or Firm—Robert C. Kain, Jr.; Michael C. Cesarano; J. Rodman Steele, Jr.

## [57] ABSTRACT

The purchasing system with a rebate feature is utilized by subscriber-purchasers, vendors providing goods and

services, a future benefit guarantor such as an insurance company selling annuity contracts and in some cases an escrow agent. The purchasing system allows for the input of purchase orders from the subscriber-purchasers for selected goods and services and correlates the transfer of funds from those purchaser-subscribers to the various vendors selling the selected goods. In one instance, the transfer occurs between the subscriber-purchasers and the escrow agent. The future benefit guarantor supplies a rebate factor which is input into the system. The system then computes and reports a rebate which is due in the future to each subscriber-purchaser from the future benefit guarantor. The rebate is based upon cost of the individually selected goods and services and the rebate factor. The system provides instructions to pay the vendors for the selected goods and services and to pay the future rebate guarantor a premium representing the purchase price of the future guaranteed rebates. Preferably, the premium is paid on a daily basis to the guarantor and a group annuity contract is funded until the end of the fiscal year. At that time, the system further instructs the guarantor to issue individual future guaranteed rebate contracts to each purchaser-subscriber based upon the total rebates or total purchases over the accounting period.

6 Claims, 4 Drawing Sheets

